

**In The Claims:**

1. (Twice Amended) A method of inferring engine coolant temperature in cylinder head temperature sensor equipped vehicles comprising the steps of:

measuring the cylinder head temperature; [and]

calculating the engine coolant temperature from the measured cylinder head temperature as a function of at least one vehicle operational state; and

generating a signal for the calculated engine coolant temperature.

2. (Pending) A method according to claim 1, wherein the vehicle operational state includes engine revolutions per minute.

3. (Pending) A method according to claim 2, wherein the vehicle operational state includes cylinder air charge temperature.

4. (Pending) A method according to claim 1, wherein the vehicle operational states are both engine revolutions per minute and cylinder air charge temperature.

5. (Pending) A method according to claim 1, further including the step of filtering the calculated engine coolant temperature so as to prevent inaccurate display readings resulting from sudden changes in vehicle operational states, the filter step performed prior to the step of generating a signal.

6. (Amended) A method according to claim 5, further including the step of [recording] determining the difference between the measured cylinder head temperature and the filtered engine coolant temperature and recording said difference.

7. (Pending) A method according to claim 6, further including the step of storing the recorded difference in keep alive memory.

8. (Pending) A method according to claim 7, further including the steps of:

decaying the difference between the measured cylinder head temperature and the filtered engine coolant temperature as an exponential function of soak time upon vehicle start-up;

generating an initial, startup signal by subtracting the measured cylinder head temperature from the last recorded difference stored in keep alive memory; and

sending an initial, startup signal to the display.

9. (Pending) A method of inferring engine coolant temperature in cylinder head temperature sensor equipped vehicles comprising the steps of:

measuring the cylinder head temperature;

calculating the engine coolant temperature from the measured cylinder head temperature as a function of engine revolutions per minute and cylinder air charge temperature; generating a signal for the calculated engine coolant temperature; and sending the generated signal to a display.

10. (Pending) A method according to claim 9, further including the step of filtering the calculated engine coolant temperature so as to prevent inaccurate display readings resulting from sudden changes in revolutions per minute and air charge temperature, the filtering step performed prior to the step of generating a signal.

11. (Amended) A method according to claim 10, further including the step of [recording] determining the difference between the measured cylinder head temperature and the filtered engine coolant temperature and recording said difference.

12. (Pending) A method according to claim 11, further including the step of storing the recorded difference in keep alive memory.

13. (Pending) A method according to claim 12, further including the steps of: decaying the difference between the measured cylinder head temperature and the filtered engine coolant temperature as an exponential function of soak time upon vehicle startup;

generating an initial, startup signal by subtracting the measured cylinder head temperature from the last recorded difference stored in keep alive memory; and

sending an initial, startup signal to the display.

14. (Pending) A system for inferring engine coolant temperature in cylinder head temperature sensor equipped vehicles comprising:

a cylinder head temperature sensor; and

a controller for calculating the engine coolant temperature from the measured cylinder head temperature as a function of engine revolutions per minute and cylinder air charge temperature, wherein the controller generates a signal for the calculated engine coolant temperature and sends the generated signal to a display.

15. (Pending) A system according to claim 14, wherein the controller further filters the calculated engine coolant temperature so as to prevent inaccurate display readings resulting from sudden changes in revolutions per minute and air charge temperature, the filtering performed prior to generation of the signal.

16. (Amended) A system according to claim 15, wherein the controller further [records] determines the difference between the measured cylinder head temperature and the filtered engine coolant temperature and records said difference.

17. (Pending) A system according to claim 16, wherein the controller further stores the recorded difference in keep alive memory.

18. (Pending) A system according to claim 17, wherein the controller further:  
decays the difference between the measured cylinder head temperature and the filtered engine coolant temperature as an exponential function of soak time if determined that the cylinder head temperature measurement was taken at vehicle startup;

generates an initial, startup signal by subtracting the measured cylinder head temperature from the last recorded difference stored in keep alive memory; and

sends an initial, startup signal to the display.

19. (Amended) The method according to claim 1, further comprising the steps of:

[generating a signal for the calculated engine coolant temperature; and]

sending the generated signal to a display.

20. (Amended) A method of operating a motor vehicle having an internal combustion engine, comprising:

measuring a cylinder head temperature; [and]

inferring an engine coolant temperature from the measured cylinder head temperature; and

generating a signal for the inferred engine coolant temperature.

21. (Amended) The method according to claim 20, further comprising:

[generating a signal for the calculated engine coolant temperature; and]

sending the generated signal to a display.

22. (Amended) The method according to claim 21, further including the step of filtering the [calculated] inferred engine coolant temperature so as to prevent inaccurate display readings resulting from sudden changes in vehicle operational states, the filter step performed prior to the step of generating a signal.

23. (Amended) The method according to claim 22, further including the step of [recording] determining the difference between the measured cylinder head temperature and the filtered engine coolant temperature and recording said difference.

24. (Pending) A method according to claim 23, further including the step of storing the recorded difference in keep alive memory.

25. (Pending) A method according to claim 24, further including the steps of:  
decaying the difference between the measured cylinder head temperature and  
the filtered engine coolant temperature as an exponential function of soak time upon vehicle  
startup;

generating an initial, startup signal by subtracting the measured cylinder head  
temperature from the last recorded difference stored in keep alive memory; and  
sending an initial, startup signal to the display.